



## BEFORE READING

### CLASSROOM CHALLENGE

*How much do you know about alcoholic drinks?*

1. How many grams of alcohol are in 1 unit?  
a. 2   b. 4   c. 8   d. 10
2. If you drank a small sherry, two glasses of wine and a small brandy, how many units of alcohol would you be taking?  
a. 5   b. 10   c. 25   d. 40
3. It is illegal to drive if you have more than 0.8 mg alcohol in each 100 ml of blood. How many units of alcohol could a normal weight man take without going over the limit?  
a. 2   b. 4   c. 8   d. 10
4. A pint of mild ale contains roughly the same number of calories as 2 glasses of wine. How many?  
a. 90   b. 120   c. 150   d. 180
5. If a man drinks 6 pints of beer in fairly rapid succession, about how long will it take to clear all the alcohol from his body?  
a. 6 hours   b. 9 hours   c. 11 hours   d. 13 hours
6. What is the recommended maximum number of units per week of alcohol for a non-pregnant woman?  
a. 7   b. 14   c. 21   d. 28

*How did you score?*

1.      a = 0   b = 1   c = 3   d = 1
2.      a = 3   b = 0   c = 0   d = 0
3.      a = 3   b = 3   c = 0   d = 0
4.      a = 0   b = 0   c = 1   d = 3
5.      a = 0   b = 0   c = 1   d = 3
6.      a = 2   b = 3   c = 0   d = 0

15 – 18: Are you putting all that knowledge into practice?

7 – 14: Could do better!

0 – 6: Unless you're a teetotaler, you'd better get some more information about the effects of alcoholic drinks!

Read the passage "Alcohol and the Law" and underline the sensible alternative.

Alcohol depresses brain and nerve function, it is not a *depressant* / *stimulant*. Blood alcohol levels *fall off* / *rise* at pretty much the same rate in infrequent and habitual drinkers. The law makes *no* / *some* allowance for the fact that habitual drinkers don't display some of the signs of intoxication until blood alcohol is *above* / *below* 0.8 mg/100 ml.

Anyone who drinks 2½ *pints* / *gallons* of beer or ½ *bottle* / *demijohn* of wine and then drives a *car* / *plane* is almost certainly breaking the law unless he waits patiently for the *liver* / *stomach* to reduce blood alcohol levels. And that could take *longer* / *shorter* than you think.

Although many 'remedies' have been tried, none is very useful in *speeding up* / *slowing down* the process. Black coffee *will* / *won't* help. *Neither* / *So* will large doses of vitamin C. And rushing around trying to 'burn off' the alcohol is *futile* / *useful* because muscles *can* / *can't* use alcohol directly. They can only use it as a source of *energy* / *new tissue* after alcohol has been processed in the *liver* / *stomach*. It's a fallacy to think that 'a good night's sleep' will overcome the indiscretions of the *morning after* / *night before*. The liver will take about 13 / 30 hours to remove all the alcohol from a night's binge.

## Yeasts and alcohol

Yeasts are now defined as a group of about 160 species of single-celled microscopic fungi. Not all are useful: some cause the spoilage of fruit and vegetables, some cause disease. Most of the yeasts used in making bread and alcoholic drinks are members of the genus *Saccharomyces*, or 'sugar fungi'. They metabolize sugar, produce carbon dioxide and alcohol. Strong odors or noxious substances are released, if at all, in only very small amounts. In this sense, they are 'clean' microbes. Essential to the yeasts' production of alcohol is their ability to survive on very little oxygen.

Yeasts introduce a variety of compounds into the grape juice or cereal 'wort' that contributes characteristic flavors; for example, they transform amino acids in the liquid into 'higher', or longer-chain alcohols. And when, after producing its limit of daughter cells by budding, a yeast cell dies, its enzymatic machinery digests the cell and releases its contents into the liquid.

Particular jobs are best done by particular kinds of yeasts. Baker's yeast, for example, should ideally produce little alcohol and a lot of carbon dioxide to do the work of raising bread dough. Two different species are commonly used in making beer. One, *Saccharomyces carlsbergensis* or *S. uvarum*, tolerates cold temperatures and falls to the bottom of the tank after fermentation; it is used in lager beers and in the bottle fermentation of champagne. The other, *Saccharomyces cerevisiae*, (*cerevisia* is Latin for 'beer'), does best at about 21°C, rises to the top of the tank, and is used for traditional English ales and beers. In wine making the situation is more complicated. The important yeasts are usually strains of a variety of *Saccharomyces cerevisiae* called *ellipsoideus* for their shape. But better than 100 different strains of several yeast species have been found growing on the skin or in the released juice of European grapes, and most starters, when they are used, contain at least several strains that may work in sequence during fermentation. In some districts, the grapes are allowed to ferment without a starter.

From: McGee, *On Food and Cooking*, Unwin Hyman



## AFTER READING

### CONTENT

Say whether these statements are true (T) or false (F) and correct them when necessary.

- |  | T                        | F                        |
|--|--------------------------|--------------------------|
| 1. Yeasts are very tiny monocellular fungi.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. There are no harmful fungi.   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Saccharomyces are 'clean' microbes since they do not release bad odours nor harmful substances. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Yeasts need a lot of oxygen to survive.   | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Yeasts flavour the raw materials for making wine and beer.                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Carbon dioxide is needed to raise bread dough.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. <i>S. cerevisiae</i> are used in the bottle fermentation of Champagne.                          | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. More strains of yeasts are involved in wine making than in beer brewing.                        | <input type="checkbox"/> | <input type="checkbox"/> |

### LANGUAGE

#### Vocabulary

**a** Join the words in the box into pairs to match the definitions.

acid amino baker's bread brewer's cereal dough grape juice wort yeast (2)

1. fungous substance used in the making of beer - \_\_\_\_\_
2. liquid obtained by pressing grapes - \_\_\_\_\_
3. infusion of malt consisting of a dilute solution of sugars that is fermented to form beer - \_\_\_\_\_
4. building block of proteins - \_\_\_\_\_
5. fungous substance used to make bread raise - \_\_\_\_\_
6. thick mixture of flour and water ready to be baked into bread - \_\_\_\_\_

**b** Choose from the shops in the box those where you would go to buy the items in the shopping-list.

Box of jasmine tea  
2 T-bones  
lettuce  
Dover sole  
Pure-malt whisky  
Small jar of caviar  
Aspirin  
Daily Mirror  
Coffee pot  
Yellow highlighter  
Ken Follet's latest best-seller  
Bowie's latest CD  
Tomato seeds  
Paint and brush  
Grandpa's cigars  
Barbie-doll for sis

baker's bookshop butcher's chemist's  
delicatessen DIY store fishmonger's garden  
centre greengrocer's grocer's hardware shop  
music shop newsagent  
off-license stationer's tobacconist's toy shop



## BEFORE READING

Use the words in the box to complete the passage 'Long-term effects'. Some words may be used more than once.

blood pressure   cancer   heart beat   immune system   inflammation   liver   nerve  
nutrients   obesity   sexual and reproductive

It's pretty obvious, at least to onlookers, when someone has had too much to drink. That person is a menace to everyone but he may well think that, in a few hours' time, he'll be back to normal and no harm will be done. That may be overoptimistic. Going over the limit just once or twice a year probably won't do any lasting damage. Doing so regularly will, over months or years, increase the risk of harm to almost every body function. Almost all damage is, in the early stages, reversible provided people stop drinking alcohol. If they don't, these are some of the problems they may eventually face:

- \_\_\_\_\_ damage – enlarged \_\_\_\_\_, fatty \_\_\_\_\_, jaundice, maybe cirrhosis
- Increased risk of oesophageal and pancreatic \_\_\_\_\_
- \_\_\_\_\_ of the stomach causing severe pain

- Deficiency of many \_\_\_\_\_ if people loose interest in food
- Damage to the \_\_\_\_\_ resulting in greater susceptibility to infection
- \_\_\_\_\_, with its attendant health problems. Alcoholic drinks have high energy values
- Weaker and less regular \_\_\_\_\_. But alcohol does not increase the risk of having a heart attack
- High \_\_\_\_\_. But the good news is that moderate alcohol consumption (up to 2 units a day) seems to lower \_\_\_\_\_!
- Impaired \_\_\_\_\_ function in both men and women
- Short-term effects on the brain and long term brain and \_\_\_\_\_ damage

### CLASSROOM CHALLENGE

*The tips in the 'Tippie Control Tips' have been mismatched. Who will be the quickest to match the 'heads' and 'tails' (in italics) so that the tips make sense?*

- Do make your own decisions / *during the working day.*
  - Do eat something before or with alcoholic drink / *drink something non-alcoholic to quench thirst.*
  - Do drink slowly / *but remember that nothing will keep blood levels low!*
  - Try not to drink alcohol / *and don't let others persuade you to "have just one more".*
  - If you're really thirsty / *take sips and put the glass down between sips.*
- Good health!



### WHILE READING

*Read and decide which is the right meaning of these words / phrases underlined in the passage.*

1. must – a. *grape juice* b. *modal verb indicating obligation*
2. period – a. *full stop* b. *length of time*
3. red alcohol soluble pigment – a. *pigment soluble in red alcohol* b. *red pigment soluble in alcohol*
4. pulp – a. *inner fleshy part of fruits* b. *poor quality popular books and magazines*
5. as high as 19% - a. *19% or higher* b. *19% or lower*
6. wild yeasts – a. *savage, uncontrolled yeasts* b. *yeasts which have not been cultivated*
7. acetic acid forming bacteria – a. *acetic acid which forms bacteria* b. *bacteria which form acetic acid*

# Wine and vinegar

## Wine

Wine results from the alcoholic fermentation by yeasts of the sugars glucose and fructose contained in grapes and other fruits. Wine yeasts can grow well in the highly acid conditions (pH 3 – 4) in grape juice and can resist 10 per cent or more alcohol, and resist the sulphur dioxide which is added to repress spoilage bacteria.

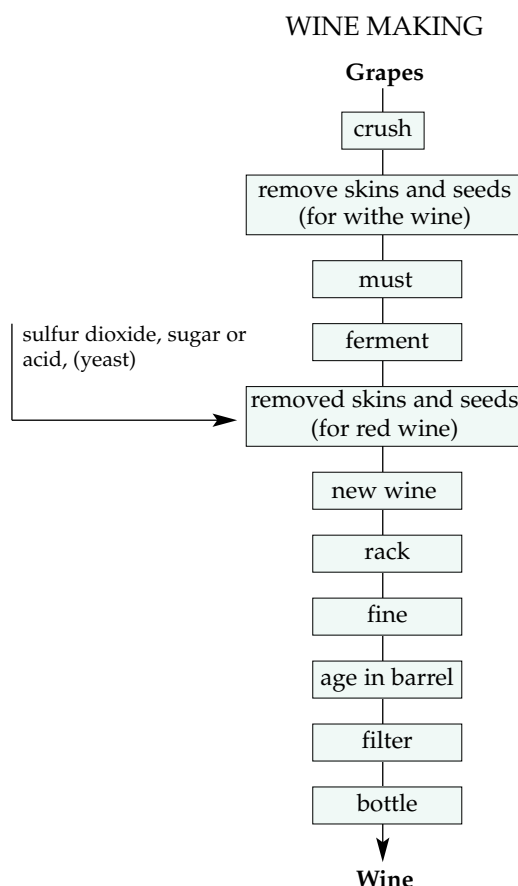
When making red wines the grapes are crushed, and water and sugar added if it is considered necessary. Sulphur dioxide is added as bisulphite to a level of approximately 100 ppm to suppress the growth of spoilage bacteria and yeasts.

The fermentation is allowed to begin – the starter organisms are sometimes the natural yeasts found on the skin of the grapes. More commonly these days a specially grown culture of *Saccharomyces cerevisiae* var. *ellipsoideus* is added to the non-sterile grape must. At first, conditions favour the growth of the yeast, but they soon become anaerobic and encourage fermentation.

The temperature of the must (crude fruit pulp) is carefully controlled at 24 to 27°C for a period of 3 to 5 days. If it is not so controlled spoilage bacteria or yeasts could grow and become predominant, in addition to which, the fermenting yeast may be killed. As the alcohol content steadily rises the red alcohol soluble pigment in the grape skins is extracted giving colour to the wine. Gas produced causes the pulp to float to the surface, and if this is not regularly broken up, it can be the site in which rapid growth of spoilage organisms occurs. The fermentation period is several weeks, after which time the alcohol content can be as high as 19 per cent, but typically is 11 to 17 per cent, the yeast normally being inhibited at alcohol concentrations beyond 18 per cent. The wine is drawn off from the pulp and aged in vats where the flavour develops.

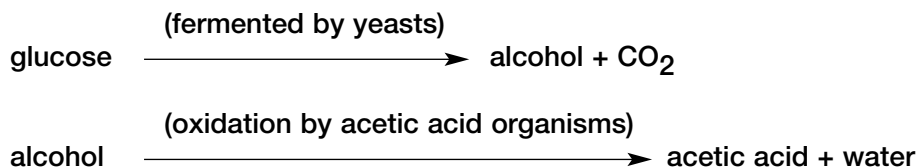
White wines are made in a similar way except that the skins and pulp are removed from the juice before fermentation begins and the temperature of fermentation at 10 to 15°C is lower than that for red wine. In sweet wines a proportion of the sugar present remains unfermented.

Wines can be pasteurized, a process which is primarily to clarify the wine by precipitation of proteins, but also to destroy a proportion of spoilage organisms. Wild yeasts may cause the development of pellicles; acetic acid forming bacteria of the genus *Acetobacter* may acidify the wine, as may lactobacilli by the production of lactic acid. The presence of acetic acid at 0.1 per cent or more inhibits yeast growth and fermentation. Wine may become slimy or ropy due to the growth of members of the genus *Leuconostoc* and other organisms.



## Vinegar

The members of the genus *Acetobacter* are used in the production of vinegar by the conversion of ethyl alcohol to acetic acid. They are allowed to grow aerobically on the surface of wine to produce wine vinegar or to acetify unhopped beer to produce malt vinegar. Its production may be summarized:



From: Parry – Pawsey, *Principles of Microbiology for students of food technology*, ST(P)



## AFTER READING

### CONTENT

Use the words in the box to complete the summary of the reading passage.

aging   bottling   convert   crushed   discourage   drawn-off   ferment   harmful   several  
taste   temperature   type   wine   yeasts

The manufacture of wine varies according to the \_\_\_\_\_ of wine to be produced, but it usually follows a standard pattern. The grapes are \_\_\_\_\_ and the grape must is allowed to \_\_\_\_\_ in vats, usually after the addition of sulphur dioxide to suppress wild yeasts and organisms other than the true \_\_\_\_\_ *Saccharomyces ellipsoideus*. Heat is evolved by the fermentation, and the \_\_\_\_\_ may have to be controlled within optimum limits. Air should be excluded from the vats as much as possible to \_\_\_\_\_ the action of *Acetobacter*, the vinegar-forming bacterium, and other harmful organisms. When fermentation is well advanced, the wine is \_\_\_\_\_. Fermentation continues and is completed after \_\_\_\_\_ weeks. Before \_\_\_\_\_ the wine is cleared to precipitate particles of suspended matter. Pasteurization and highly efficient filtration are sometimes used to eliminate last traces of \_\_\_\_\_ organisms. During \_\_\_\_\_ and subsequent maturing in bottles, many reactions including oxidation occur with the formation of traces of esters, aldehydes, etc. which, together with the tannin and acids already present, enhance the \_\_\_\_\_, aroma, and preservative properties of the wine. Vinegar is produced by the action of *Acetobacter* organisms which \_\_\_\_\_ the ethyl alcohol in wine to acetic acid.

## LANGUAGE

### Vocabulary

**a** Match the words in the box into pairs of synonyms.

film peel pellicle place proportion ratio ropy site skin slimy tun vat

**b** Say whether the verbs in column B are synonyms or antonyms of the verbs in column A.

A

add  
age  
allow  
begin  
break up  
clarify  
consider  
crush  
draw off  
extract  
find  
float  
inhibit  
repress  
rise

B

remove  
mature  
forbid  
end  
fragment  
cloud  
think  
squash  
withdraw  
develop  
lose  
sink  
encourage  
suppress  
increase



### BEFORE READING

**a** Use the words in the box to replace the words in Italian in the passage 'A little of what you fancy.'

blood centuries cheerful day drink drive drunk glass heart hour  
increasing intestine liver key months more parties road smaller speed  
spirits stomach stop turkey water woman years



Alcohol has been an integral part of **feste** \_\_\_\_\_, celebrations and other happy social gatherings for **secoli** \_\_\_\_\_. It helps people to relax, to feel **allegri** \_\_\_\_\_ and to be more sociable. As long as drinking is controlled, there's no reason why that should change. But staying in control and knowing when to **fermarsi** \_\_\_\_\_ is the **chiave** \_\_\_\_\_.

In recent years, various government 'Don't **bere** \_\_\_\_\_ and **guidare** \_\_\_\_\_' campaigns have become as much a part of Christmas as **tacchino** \_\_\_\_\_, trees and tinsel. The objective is, of course, to reduce the number of **strada** \_\_\_\_\_ accidents caused by the effect of too much alcohol on the nervous system.

But drinking too much over a period of **mesi** \_\_\_\_\_ or **anni** \_\_\_\_\_ damages far + than the nervous system. Liver, **cuore** \_\_\_\_\_, glands, stomach and **intestino** \_\_\_\_\_ may all suffer, even though the person concerned rarely, if ever gets **ubriaco** \_\_\_\_\_.

The real concern is not about social drinkers who never go over the limit and don't drink every **giorno** \_\_\_\_\_ of their lives. The concern is for the **crescente** \_\_\_\_\_ number of people with alcohol-related disorders.

If anybody tries to take enough alcoholic drink to make a real contribution to his vitamin or mineral intake, he's certainly drinking too much! **Gli alcolici** \_\_\_\_\_ don't contain any vitamins or minerals. A **bicchiere** \_\_\_\_\_ of wine – red or white – contains about 15% of the recommended daily amount of iron for a man; 10% for a **donna** \_\_\_\_\_. Half-a-pint of light ale provides about 7% of two B vitamins – riboflavin and nicotinic acid. And that's about it.

Alcohol begins to get into the blood less than one **ora** \_\_\_\_\_ after drinking begins. This very rapid absorption occurs partly because alcohol does not have to be digested first and partly because a significant amount is absorbed from the **stomaco** \_\_\_\_\_. Absorption can be slowed a bit, but not much, if alcoholic drink is taken with food. Once it is in the **sangue** \_\_\_\_\_ alcohol is quickly distributed throughout all the **acqua** \_\_\_\_\_ in the body so it appears in almost every organ and tissue, including blood. Because women have a smaller proportion of body water (but more fat), and because they are, generally, **più piccole** \_\_\_\_\_ than men, one drink will raise the blood alcohol concentration more in women than in men.

Alcohol certainly affects most organs, but only the **fegato** \_\_\_\_\_ can convert it to other substances and clear it from the body. So, the rate at which blood alcohol level falls depends almost entirely on the **velocità** \_\_\_\_\_ at which the liver can process it.

- b** *The words below might come in handy when ordering 'a beer' in an English-speaking country. If you want to learn how to get the right beer, try to match the words in the box and the definitions. (If you cannot do that by yourself look at the solutions at the bottom of the page.)*

ale   beer/bitter (UK) / ale/dark beer (US)   beer/stout (UK)   draught   froth   (half) pint  
lager (UK) / beer (US)   light ale/pale ale   real ale

1. Light, yellow-coloured beer – (UK) \_\_\_\_\_ / (US) \_\_\_\_\_
2. Dark and bitter-tasting beer - (UK) \_\_\_\_\_ / (US) \_\_\_\_\_
3. Strong, dark beer - (UK) \_\_\_\_\_
4. Strong heavy beer, usually bottled - \_\_\_\_\_
5. Rather weak pale beer, usually kept in bottles - \_\_\_\_\_
6. Beer made by traditional methods which ferments in the barrel and which is not fizzy - \_\_\_\_\_
7. Beer which comes out of a tap - \_\_\_\_\_
8. Amount of beer which is usually bought in a pub - \_\_\_\_\_
9. White mass of bubbles on top of a glass of beer - \_\_\_\_\_



## WHILE READING

*Read and decide which is the correct meaning of these words underlined in the passage.*

1. hop plant – *a. short jumping plant b. tall climbing plant*
2. stage – *a. scene of action b. step*
3. tank – *a. armoured fighting vehicle b. large container*
4. grain – *a. seed b. wheat*
5. drums – *a. large containers b. musical instruments*
6. green – *a. green coloured b. not dried*
7. ground – *a. crushed b. sunk*
8. yeasty head – *a. foam caused by yeasts b. the mind of yeasts*
9. rope – *a. cord b. sliminess*



Solution: 1 - lager (UK) / beer (US); 2 - beer/bitter (UK) / ale/dark beer (US); 3 - beer/stout (UK); 4 - ale; 5 - light ale/pale ale; 6 - real ale; 7 - draught; 8 - (half) pint; 9 - froth/head

# Beer

Beer and other similar beverages are made from malted barley and water, and flavoured with the female flower of the hop plant.

The first stage in the production of beer is 'malting' the barley. To do this the barley seeds are steeped two to four times in tanks of water at 10 to 15°C, a process taking up to 60 hours. The grain takes up to about 42 per cent moisture and is then put on to floors to a depth of about 100 mm. or into saladin boxes or drums where germination takes place.

The rate of germination may be hastened by the addition of the growth stimulating substance, gibberellic acid, at about 1 ppm; then, at a time judged by the length of the acrospire and rootlets, the green malt is dried carefully (kilned) and then ground – the product being known as the 'grist'.

The brewing process begins with 'mashing'. During this 90 minute period the grist is mixed with water at approximately 70°C and the enzymes derived from the barley become very active and convert the starch into maltose. The 'wort', so produced, is then boiled in order to end the activity of the a and b amylases, to sterilize it and to coagulate the residual protein. The hot wort, to which have been added the flavouring hops or hop extracts, is cooled and aerated and then the yeast added, and the wort is said to be 'pitched'.

The yeast is pitched into aerated wort in order to stimulate yeast cell growth, increase in yeast cell number and to encourage the synthesis of enzymes which will allow maltose to be absorbed and metabolized. The conditions gradually change and become anaerobic and alcoholic fermentation begins and the pH drops to around 5.2.

The pitching yeast is often not a pure culture but is passed from brew to brew for years or even decades. This practice still continues but is being replaced gradually by the use of a pure culture of pitching yeast produced in the brewery's laboratory. The yeast becomes contaminated by wild yeasts, acetic and lactic acid bacteria and other organisms as it is pitched from brew to brew, and so is discarded after about ten generations and replaced with new pitching yeast grown from a single cell strain. The flavouring hops possess antiseptic properties, which together with the lower pH and the presence of the alcohol help to inhibit the growth of undesirable bacteria, but use of pure culture pitching yeast means that the fermentation is more predictable, resulting in a predictable quality of beer. In batch beer-making strains of *Saccharomyces cerevisiae* – a 'top' yeast - are used, which in the vigorous fermentation of the carbohydrate are carried to the surface of the beer on bubbles of carbon dioxide, and form a yeast head which can be skimmed off; in lager-making, strains of *Saccharomyces carlbergensis* – 'bottom' yeast – are used which do not rise to the surface of the lager but settle at the bottom of the fermentation vessel.

The carbon dioxide evolved during fermentation is led away and can be stored and used in the carbonation of beers, or in the manufacture of 'dry ice', or, as in some breweries, not recovered at all.

The fermentation of the glucose derived from the maltose is allowed to run until it is all used up – the beer at that time having an alcohol content of 2.5 to 10 per cent. Then, after the yeast cells have been separated from the beer, it is run into storage tanks and either put into casks, racked, or it is filtered and bottled and then pasteurized at 68°C for a few seconds or at 60°C for 20 minutes.

Spoilage of beer is primarily due to wild yeasts which have fermentation patterns differing from that of the pitching yeast, and may cause problems in the clarification of beer. Yeasts of the genera *Pichia* and *Hansenula* may form pellicles, and certain strains of *Saccharomyces* impart unpleasant flavours.

Beer may be acetified by the growth of bacteria of the genera *Acetobacter* and *Acetomonas*. The danger of this arises particularly in cask beer when air has entered the cask to replace beer which has been drawn off. The same organisms may also, by capsular secretions, cause 'rope'. Lactic acid bacteria – both rods and cocci – can spoil beer under anaerobic conditions. They are resistant to the antiseptic qualities of the hops and cause turbidity, off flavours, acid and sometimes ropiness.

From: Parry – Pawswey, *Principles of Microbiology for students of food technology*, ST(P)



### AFTER READING

#### CONTENT

**a** *Key-words in beer brewing. Match words and descriptions.*

- |                    |  |
|--------------------|--|
| 1. barley          | <input type="checkbox"/> beer fermentation   |
| 2. brew            | <input type="checkbox"/> factory where beer is made                                      |
| 3. brewery         | <input type="checkbox"/> grain kept in water until it starts to grow and then dried      |
| 4. germination     | <input type="checkbox"/> flowers used to flavour beer                                    |
| 5. grist           | <input type="checkbox"/> to put seeds into a liquid to soften them and start germination |
| 6. hops            | <input type="checkbox"/> beginning of the growth of a seed                               |
| 7. kilning         | <input type="checkbox"/> grasslike grain plant used in the making of beer                |
| 8. malt            | <input type="checkbox"/> drying  |
| 9. mashing         | <input type="checkbox"/> ground malt   |
| 10. pitching yeast | <input type="checkbox"/> mixing malt with hot water                                      |
| 11. starch         | <input type="checkbox"/> white tasteless substance forming an important part of grains   |
| 12. steeping       | <input type="checkbox"/> malt must   |
| 13. wort           | <input type="checkbox"/> yeast which is added to the wort to stimulate yeast cell growth |

**b** *Put the sentences below into the correct order and join them into a meaningful passage on the way beer is made.*

The brewing of beer can be divided into several stages.

First, \_\_\_\_\_

Second, \_\_\_\_\_

Third, \_\_\_\_\_

Fourth, \_\_\_\_\_

Fifth, \_\_\_\_\_

Sixth, \_\_\_\_\_

Finally, \_\_\_\_\_

- dry barley grains are soaked in water and allowed to germinate. Germination of the barley seeds leads to the production of amylases and proteases which liberate sugars and amino acids from the stored starch and proteins.
- hops are thrown into the wort, and the two are boiled together. This treatment extracts the hops resins that flavour the beer, inactivates the enzymes, kills any microbes present, and deepens the colour of the wort.
- the finished beer is clarified, filtered again, sometimes pasteurized in bulk or bottles, and packaged for sale.
- the germinated barley is ground up and mixed with hot water to allow enzyme activity to proceed, and all of the starch and protein to be broken down to mixtures of sugars and amino acids. This mix is called the wort.
- the new beer is raked, filtered to remove most of the yeast, and then aged for some time.
- the partly germinated grains, or malt, are dried to halt the enzyme activity, and kilned (roasted) until they reach the proper colour and flavour.
- the wort is fermented with yeast until the desired levels of sugar and alcohol are reached.

## LANGUAGE

### Vocabulary

*Which of the verbs in the box are synonyms of those listed below?*

aerate (a)rise cool discard draw off drop flavour go up hasten impart kiln  
pitch possess skim off steep sterilize

1. dry \_\_\_\_\_
2. fall \_\_\_\_\_
3. give \_\_\_\_\_
4. go up \_\_\_\_\_
5. have \_\_\_\_\_
6. hurry \_\_\_\_\_
7. remove \_\_\_\_\_
8. throw away \_\_\_\_\_
9. withdraw \_\_\_\_\_



### LISTENING

*You are going to listen to an oenologist talking about the classification of wines and about the main differences between wine and beer.*

**a** *Listen and complete the notes below.*

Wines may be classified according to:

- \_\_\_\_\_
- the technique of production, in \_\_\_\_\_
- their colour, in \_\_\_\_\_
- their taste, in \_\_\_\_\_

The nature and quality of wine is determined by \_\_\_\_\_

The raw materials in wine making are \_\_\_\_\_

Grapes store energy in the form of \_\_\_\_\_

In beer production the carbohydrate fermented is \_\_\_\_\_

Different yeasts result in \_\_\_\_\_

**b** *Compare your notes with your partner's.*

**c** *Second listening: check if the notes you have written are correct.*

### PRONUNCIATION

*Listen and repeat*

juice, vineyard, technique, yeast, dosage,  
effervescence, interference, either, further,  
raw material, primarily, mature, lager,  
malting

